

## **Historic, Archive Document**

Do not assume content reflects current scientific knowledge, policies, or practices.



United States  
Department  
of Agriculture

aSB763.C2F45

Forest Service

Forest Pest Management  
2810 Chiles Rd., Ste. B  
Davis, CA 95616



# Drop Size Spectra For Beecomist, Micronair, And 8006 Flat Fan Nozzle With Dipel 8L And Thuricide 48LV

FPM 86-4  
March 1986



## Pesticide Precautionary Statement and Disclaimer

This publication reports research involving pesticides or their simulants. It does not contain recommendations for their use, nor does it imply that the uses discussed here have been registered. All uses of pesticides must be registered by appropriate State and/or Federal agencies before they can be recommended.

**CAUTION:** Pesticides can be injurious to humans, domestic animals, desirable plants, and fish or other wildlife - if they are not handled or applied properly. Use all pesticides selectively and carefully. Follow recommended practices for the disposal of surplus pesticides and pesticide containers.

Information contained in this report has been developed for the guidance of employees of the Forest Service, U.S. Department of Agriculture, its contractors, and its cooperating Federal and State agencies. The Department of Agriculture assumes no responsibility for the interpretation or use of this information by other than its own employees.

The use of trade, firm, or corporation names is for the information and convenience of the reader. Such use does not constitute an official evaluation, conclusion, recommendation, endorsement, or approval of any product or service to the exclusion of others which may be suitable.

# Drop Size Spectra For Beecomist, Micronair, And An 8006 Flat Fan Nozzle With Dipel 8L And Thuricide 48LV

Prepared by:

W.E. Yates  
R.E. Cowden

Agricultural Engineering Department  
University of California  
Davis, CA 95616

Prepared for:

U.S. Department of Agriculture  
Forest Service  
Forest Pest Management  
2810 Chiles Road, Suite B  
Davis, CA 95616  
(916)758-4600

John W. Barry  
Project Leader

Purchase Order Nos. 40-91S8-5-0828  
and 40-91S8-5-0827 (Work under these  
purchase orders was completed in  
September 1985)





## PREFACE

The purpose of this wind tunnel test was to establish drop size characteristics of Bacillus thuringiensis atomized with a Micronair, Beecomist, and flat fan nozzle. These tests were run specifically in support of USDA Forest Service (FS) field operations which were conducted in 1985. This report represents formalization of data which was provided to field units in 1985. Wind tunnel data are used by the FS in selecting proper equipment for pesticide application. Data are used also as input to mathematical models which predict spray coverage, canopy penetration, and off-target drift.

Funding was provided by USDA Forest Service, Forest Pest Management, Washington Office. Questions and comments should be directed to John W. Barry, USDA Forest Service, Forest Pest Management, 2810 Chiles Road, Suite B, Davis, CA 95616 (916)758-4600.

TABLE I - Equipment Required For Selected Applications	4
TABLE II - Air currents Required For Selected Flow Rates and Formulations	5
TABLE III - Summary of Drop Size Spectra With the Micronair Nozzle	6
TABLE IV - Drop Size Data, 2000 PSI Flat Fan Nozzle, 125 mph, 10 gpm	7
TABLE V - Drop Size Data, 2000 PSI Flat Fan Nozzle, 125 mph, 10 gpm	8
TABLE VI - Drop Size Data, 2000 PSI Flat Fan Nozzle, 125 mph, 10 gpm	9
TABLE VII - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	10
TABLE VIII - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	11
TABLE IX - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	12
TABLE X - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	13
TABLE XI - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	14
TABLE XII - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	15
TABLE XIII - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	16
TABLE XIV - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	17
TABLE XV - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	18
TABLE XVI - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	19
TABLE XVII - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	20
TABLE XVIII - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	21
TABLE XIX - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	22
TABLE XX - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	23
TABLE XXI - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	24
TABLE XXII - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	25
TABLE XXIII - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	26
TABLE XXIV - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	27
TABLE XXV - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	28
TABLE XXVI - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	29
TABLE XXVII - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	30
TABLE XXVIII - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	31
TABLE XXIX - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	32
TABLE XXX - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	33
TABLE XXXI - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	34
TABLE XXXII - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	35
TABLE XXXIII - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	36
TABLE XXXIV - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	37
TABLE XXXV - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	38
TABLE XXXVI - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	39
TABLE XXXVII - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	40
TABLE XXXVIII - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	41
TABLE XXXIX - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	42
TABLE XL - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	43
TABLE XLI - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	44
TABLE XLII - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	45
TABLE XLIII - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	46
TABLE XLIV - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	47
TABLE XLV - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	48
TABLE XLVI - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	49
TABLE XLVII - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	50
TABLE XLVIII - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	51
TABLE XLIX - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	52
TABLE L - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	53
TABLE LI - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	54
TABLE LII - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	55
TABLE LIII - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	56
TABLE LIV - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	57
TABLE LV - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	58
TABLE LVI - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	59
TABLE LVII - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	60
TABLE LVIII - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	61
TABLE LIX - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	62
TABLE LX - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	63
TABLE LXI - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	64
TABLE LXII - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	65
TABLE LXIII - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	66
TABLE LXIV - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	67
TABLE LXV - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	68
TABLE LXVI - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	69
TABLE LXVII - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	70
TABLE LXVIII - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	71
TABLE LXIX - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	72
TABLE LXX - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	73
TABLE LXXI - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	74
TABLE LXXII - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	75
TABLE LXXIII - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	76
TABLE LXXIV - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	77
TABLE LXXV - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	78
TABLE LXXVI - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	79
TABLE LXXVII - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	80
TABLE LXXVIII - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	81
TABLE LXXIX - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	82
TABLE LXXX - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	83
TABLE LXXXI - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	84
TABLE LXXXII - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	85
TABLE LXXXIII - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	86
TABLE LXXXIV - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	87
TABLE LXXXV - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	88
TABLE LXXXVI - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	89
TABLE LXXXVII - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	90
TABLE LXXXVIII - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	91
TABLE LXXXIX - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	92
TABLE LXXXX - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	93
TABLE LXXXXI - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	94
TABLE LXXXXII - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	95
TABLE LXXXXIII - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	96
TABLE LXXXXIV - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	97
TABLE LXXXXV - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	98
TABLE LXXXXVI - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	99
TABLE LXXXXVII - Drop Size Data, Beecomist Nozzle, 50 mph, 10 gpm	100





## TABLE OF CONTENTS

	<u>Page</u>
Preface . . . . .	i
Table of Contents . . . . .	ii
Introduction . . . . .	1
Results . . . . .	2
Summary . . . . .	3
Table I - Tank Mixture and Total Application Rates . . . . .	4
Table II - Flow Rate Required For Selected Applications . . . . .	4
Table III - Adjustments Required For Selected Flow Rates and Formulations . . . . .	5
Table IV - Summary of Drop Size Spectrum From the Atomizers With Selected Mixtures . . . . .	5
Table V - Drop Size Data, 8006 Flat Fan Nozzle, 135 mph, .6 gpm, Dipel 8L Neat . . . . .	6
Figure I - Drop Size and Mass Data Graphs, 8006 Flat Fan Nozzle, 135 mph, .6 gpm, Dipel 8L Neat . . . . .	7
Table VI - Drop Size Data, 8006 Flat Fan Nozzle, 135 mph, .6 gpm, 1 Part Dipel 8L, 1 Part Water . . . . .	8
Figure II - Drop Size and Mass Data Graphs, 8006 Flat Fan Nozzle, 135 mph, .6 gpm, 1 Part Dipel 8L, 1 Part Water . . . . .	9
Table VII - Drop Size Data, Beecomist 360A, 50 mph, .37 gpm, Dipel 8L Neat . . . . .	10
Figure III - Drop Size and Mass Data Graphs, Beecomist 360A, 50 mph, .37 gpm, Dipel 8L Neat . . . . .	11
Table VIII - Drop Size Data, Beecomist 360A, 50 mph, .7 gpm, 1 Part Dipel 8L, 1 Part Water . . . . .	12
Figure IV - Drop Size and Mass Data Graphs, Beecomist 360A, 50 mph, .7 gpm, 1 Part Dipel 8L, 1 Part Water . . . . .	13
Table IX - Drop Size Data, Beecomist 360A, 50 mph, .95 gpm, 1 Part Dipel 8L, 1 Part Water . . . . .	14
Figure V - Drop Size and Mass Data Graphs, Beecomist 360A, 50 mph, .95 gpm, 1 Part Dipel 8L, 1 Part Water . . . . .	15



Table of Contents (continued)	<u>Page</u>
Table X - Drop Size Data, Beecomist 360A, 50 mph, .47 gpm, Thuricide 48LV Neat . . . . .	16
Figure VI - Drop Size and Mass Data Graphs, Beecomist 360A, 50 mph, .47 gpm, Thuricide 48LV Neat . . . . .	17
Table XI - Drop Size Data, Beecomist 360A, 50 mph, .95 gpm, 1 Part Thuricide 48LV, 1 Part Water . . . . .	18
Figure VII - Drop Size and Mass Data Graphs, Beecomist 360A, 50 mph, .95 gpm, 1 Part Thuricide 48LV, 1 Part Water . . . . .	19
Table XII - Drop Size Data, Micronair AU5000, 135 mph, .95 gpm, Dipel 8L Neat . . . . .	20
Figure VIII - Drop Size and Mass Data Graphs, Micronair AU5000, 135 mph, .95 gpm, Dipel 8L Neat . . . . .	21
Table XIII - Drop Size Data, Micronair AU5000, 135 mph, 1.9 gpm, 1 Part Dipel 8L, 1 Part Water . . . . .	22
Figure IX - Drop Size and Mass Data Graphs, Micronair AU5000, 135 mph, 1.9 gpm, 1 Part Dipel 8L, 1 Part Water . . . . .	23
Table XIV - Drop Size Data, Micronair AU5000, 135 mph, 2.6 gpm, 1 Part Dipel 8L, 1 Part Water . . . . .	24
Figure X - Drop Size and Mass Data Graphs, Micronair AU5000, 135 mph, 2.6 gpm, 1 Part Dipel 8L, 1 Part Water . . . . .	25





### Introduction:

Tests were conducted in a wind tunnel to measure drop size spectra from two different rotary atomizers and from a 8006 flat fan nozzle oriented 90° to the airstream using Dipel 8L and Thuricide 48LV at different flow rates and air speeds.

### Equipment:

A Beecomist 360A spinner operated at 28VDC, a Micronair AU5000 spinner with standard 3.63 inch blades and a Spraying Systems 8006 flat fan nozzle were used for all tests.

The tests were conducted in a wind tunnel with a test section 8 ft. long and 2 x 2 ft. cross section. A Particle Measurement System (PMS) probe, OAP-2D-GAI, with a PMS 11-C data acquisition system was used to measure the drop size spectra. The probe has a nominal class size of 33  $\mu\text{m}$ . The system counts and classifies the drops into 62 size classes from 28 to 2062  $\mu\text{m}$ .

### Procedures:

The 8006 flat fan nozzle was oriented at 90° to the airstream and mounted on a microprocessor controlled mechanism that could move the nozzle to scan the entire spray pattern. The Beecomist spinner was operated at 28VDC and maintained an rpm of 12,700 for all tests. The Micronair blade angle was adjusted for all tests to maintain 7600 rpm. The rotary atomizers were positioned vertically at 9 positions. For the Beecomist, this represented 8 equal sampling ring areas of 70.8  $\text{in}^2$  plus a center area of 5.9  $\text{in}^2$ . For the Micronair, this represented eight rings of 37.7  $\text{in}^2$  plus a center area of 12.6





in<sup>2</sup>. A spinner test consisted of measuring the drop spectra in each of the 9 sampling areas then combining these into one composite pattern that represents the overall temporal drop size distribution for the atomizer. All tests were repeated and the results averaged to determine the drop size distribution for each test condition.

Table I shows the tank mixtures for the selected application rates for each atomizer. Table II shows the flow rate per atomizer required for selected air speed, swath width, number of units and application rate for each atomizer. Table III shows the flow regulator and pressure used to achieve the desired flow rate.

#### Results:

Table IV is a summary of the drop size spectra for the selected formulations, airspeed, and flow rates for each atomizer. The nomenclature used is as follows:

$D_{V.1}$  = Diameter that contains 10% of volume in drops of smaller size.

$D_{V.5}$  = Diameter that contains 50% of volume in drops of smaller size.

(Volume median diameter)

$D_{V.9}$  = Diameter that contains 90% of volume in drops of smaller size.

$$\text{Relative Span} = \text{R.S.} = \frac{D_{V.9} - D_{V.1}}{D_{V.5}}$$

The data shows that the drop size is almost the same for the Beecomist tests run at 50 mph and the Micronair tests run at 135 mph at the two concentrations of Dipel 8L. This indicates that the droplet breakup is primarily due to the high rpm of the spinners and was not affected very much by the air speed or the concentration of the Dipel 8L. The two tests run with the Thuricide 48LV indicates that this material generates a smaller particle size than the Dipel 8L for similar test conditions. The appendix contains the



complete drop size frequency data, statistical results and graphs for all the tests.

Summary:

Two different rotary atomizers and an 8006 flat fan nozzle were evaluated. The rpm of the rotary atomizers were kept constant for all tests and gave similar results using the Dipel 8L formulations. The tests using the Thuricide 48LV produced a smaller drop size than the tests using the Dipel 8L. The 8006 flat fan nozzles directed at 90° to the airstream produced the largest drop size for all the tests.





Table I

Tank Mixture and Total Application Rates

Atomizer	Formulation	Conc. of form.		Tank mix		Total
		BIU/Gal	BIU/Ac	Pt form:Pt water		application rate oz tank mix/acre
8006 flat fan	Dipel 8L	64	12	Undiluted		24
8006 flat fan	Dipel 8L	64	12	1:1		48
Beecomist	Dipel 8L	64	12	Undiluted		24
Beecomist	Dipel 8L	64	12	1:1		48
Beecomist	Dipel 8L	64	16	1:1		64
Beecomist	Thuricide 48LV	48	12	Undiluted		32
Beecomist	Thuricide 48LV	48	12	1:1		64
Micronair	Dipel 8L	64	12	Undiluted		24
Micronair	Dipel 8L	64	12	1:1		48
Micronair	Dipel 8L	64	16	1:1		64

Table II

Flow Rate Required For Selected Applications

Atomizer	Air-speed mph	Swath Width ft.	Total Applic. Rate oz/acre	Total flow rate gpm	No. of Atomizers	Flow rate per atomizer gpm
8006 flat fan	135	150	24	7.7	13	0.6
8006 flat fan	135	150	48	15.3	26	0.6
Beecomist	50	50	24	1.48	4	0.37
Beecomist	50	50	48	2.8	4	0.7
Beecomist	50	50	64	3.8	4	0.95
Beecomist	50	75	32	1.88	4	0.47
Beecomist	50	75	64	3.8	4	0.95
Micronair	135	150	24	7.6	8	0.95
Micronair	135	150	48	15.2	8	1.9
Micronair	135	150	64	20.5	8	2.56





Table III

Adjustments Required for Selected Flow Rates and Formulations

<u>Atomizer</u>	<u>Flow Rate</u> <u>gpm</u>	<u>Formulation</u>	<u>Spraying Systems</u> <u>Flow</u> <u>Regulator</u>	<u>Pressure</u> <u>psi</u>
8006 flat fan	0.6	Dipel 8L	--	40
8006 flat fan	0.6	50% Dipel 8L	--	40
Beecomist	0.37	Dipel 8L	#59	30
Beecomist	0.47	Thuricide 48LV	#68	30
Beecomist	0.7	50% Dipel 8L	#68	60
Beecomist	0.95	50% Thuricide 48LV	VRU #7	25
Beecomist	0.95	50% Dipel 8L	VRU #7	25
Micronair	0.95	Dipel 8L	#86	40
Micronair	1.9	50% Dipel 8L	#120	45
Micronair	2.56	50% Dipel 8L	#140	40

Table IV

Summary of Drop Size Spectrum From the Atomizers  
With Selected Mixtures

<u>Atomizer</u>	<u>Angle</u> <u>/rpm</u>	<u>Air- speed</u> <u>mph</u>	<u>Flow Rate</u> <u>gpm</u>	<u>Mixture</u>	<u>Drop size, <math>\mu</math>m</u>			<u>R.S.</u>
					<u>D<sub>V.1</sub></u>	<u>D<sub>V.5</sub></u>	<u>D<sub>V.9</sub></u>	
8006 flat fan	90°	135	0.6	Dipel 8L	118	212	322	0.96
8006 flat fan	90°	135	0.6	50% Dipel 8L	101	187	289	1.01
Beecomist	12,700	50	0.37	Dipel 8L	<56	122	184	1.07
Beecomist	12,700	50	0.7	50% Dipel 8L	58	124	184	1.07
Beecomist	12,700	50	0.95	50% Dipel 8L	62	128	195	1.04
Beecomist	12,700	50	0.47	Thuricide 48LV	<56	89	161	1.42
Beecomist	12,700	50	0.95	50% Thuricide 48LV	<56	104	169	1.16
Micronair	7,600	135	0.95	Dipel 8L	67	124	173	0.85
Micronair	7,600	135	1.9	50% Dipel 8L	68	128	180	0.88
Micronair	7,600	135	2.6	50% Dipel 8L	60	120	175	0.95



Table V - Drop Size Data, 8006 Flat Fan Nozzle, 135 mph, .6 gpm,  
Dipel 8L Neat

Nozzle	8006 FLAT FAN	Slice Rate	4 MHz
Angle to Airstream	90 degrees	AVG	100
Spray Pressure	40 psi	DFM	1 cm.
Airspeed	135 mph	BAR	1.5
Flow Rate	.6 gpm	Distance to Probe	51 cm.
Tank Mix	DIPEL 8L, NEAT	Sample Interval	360 sec.
		Number of Samples	1
		Number of Scans	10
		Scan Spacing	2.5 cm.
		Scan Length	38 cm.

FILE: C:\PMS\DATA\10078509.001

Number of Tests Combined: 2

UPPER LIMIT	N(RAW)	N/SEC	Gt/SEC	% N	% VOL.	ACCUMULATED % N	ACCUMULATED % VOL.
56	3055	1.47E+07	0.48	47.37	1.40	47.37	1.40
89	5419	4.78E+06	0.95	15.35	2.75	62.72	4.16
122	4081	3.77E+06	2.29	12.12	6.63	74.84	10.79
154	3496	3.03E+06	4.15	9.75	12.03	84.59	22.81
187	2564	1.93E+06	4.99	6.20	14.46	90.79	37.27
220	1960	1.34E+06	5.85	4.30	16.95	95.08	54.21
252	1442	760971	5.18	2.45	15.02	97.53	69.23
284	956	415939	4.16	1.34	12.10	98.86	81.33
316	544	193022	2.78	0.62	8.04	99.48	89.37
351	297	110990	2.17	0.36	6.29	99.84	95.66
382	107	28821	0.74	0.09	2.13	99.93	97.79
414	48	14665	0.48	0.05	1.40	99.98	99.19
447	13	4594	0.19	0.01	0.55	100.00	99.74
479	4	538	0.03	0.00	0.08	100.00	99.82
512	0	0	0.00	0.00	0.00	100.00	99.82
545	0	0	0.00	0.00	0.00	100.00	99.82
578	2	659	0.06	0.00	0.18	100.00	100.00

TOTAL 2740E+04 3.11E+07 34.53

TOTAL ACCEPTED RAW PARTICLES / TOTAL IMAGES = 24016 / 29713 = 80.8%

NUMBER MEAN DIA.= D<sub>10</sub>.... 88.42 μm  
 VOLUME MEAN DIA.= D<sub>30</sub>.... 128.49 μm  
 SAUTER MEAN DIA.= D<sub>32</sub>.... 179.36 μm

NUMBER MEDIAN DIA.= D<sub>N.1</sub>... <56 μm  
 D<sub>N.5</sub>... 61.93 μm  
 D<sub>N.9</sub>... 183.12 μm

VOLUME MEDIAN DIA.= D<sub>V.1</sub>... 118.02 μm  
 D<sub>V.5</sub>... 211.69 μm  
 D<sub>V.9</sub>... 321.60 μm

RELATIVE SPAN= 0.96





Figure I

Nozzle Type . . . 8006 FLAT FAN  
 Angle to Airstream 90°  
 Spray Pressure . . 40 psi  
 Airspeed . . . . . 135 mph  
 Flow Rate . . . . . .6 gpm  
 Tank Mix: DIPEL 8L, NEAT

FILE: C:\PMS\DATA\10078509.001

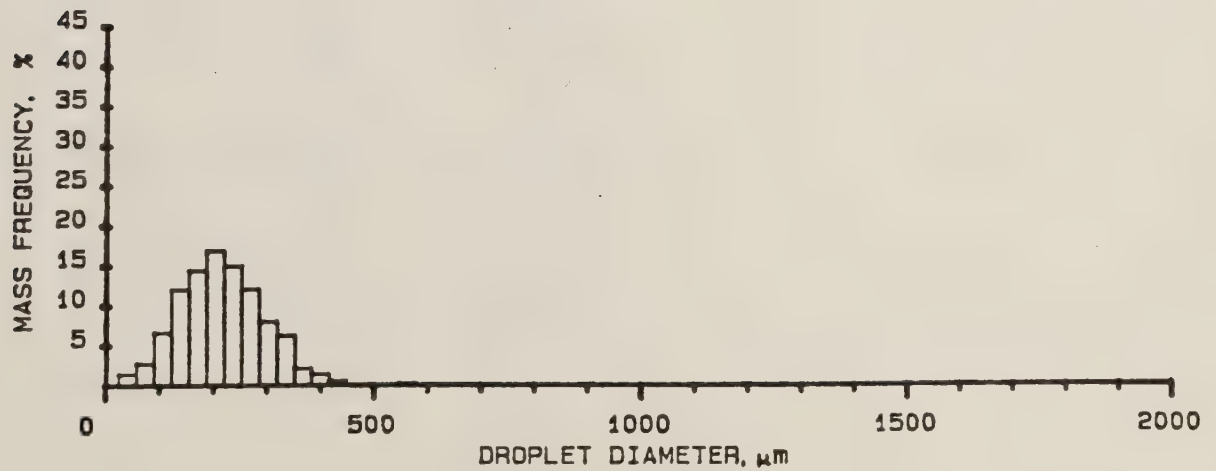
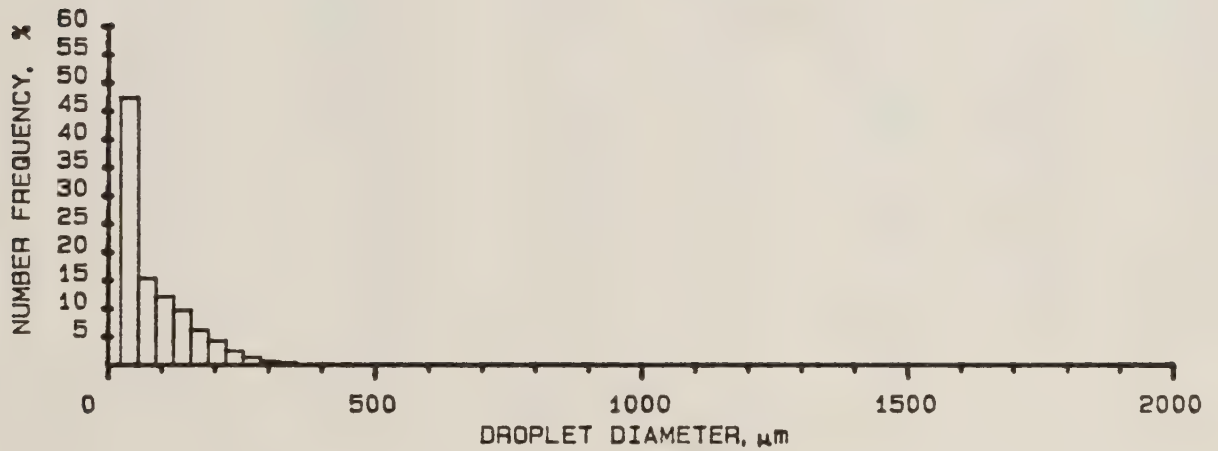
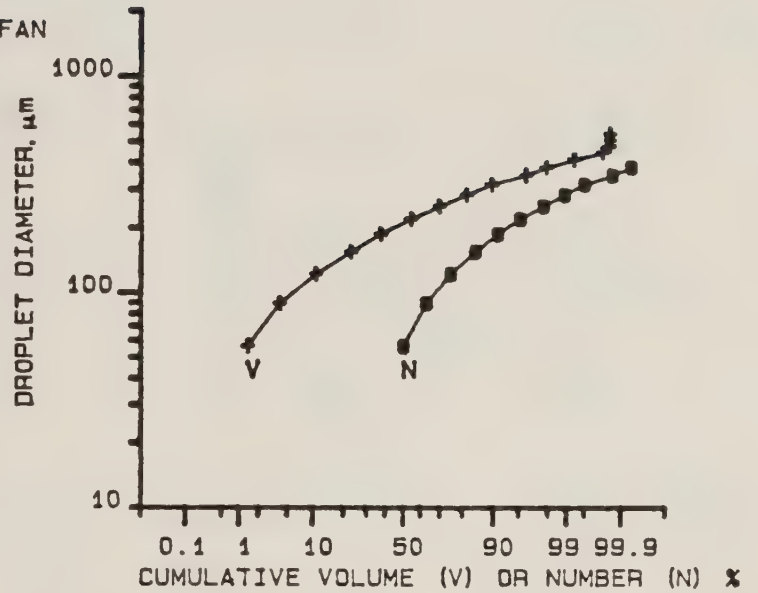




Table VI - Drop Size Data, 8006 Flat Fan Nozzle, 135 mph, .6 gpm,  
1 Part Dipel 8L, 1 Part Water

Nozzle	8006 FLAT FAN	Slice Rate	4 MHz
Angle to Airstream	90 degrees	AVG	100
Spray Pressure	40 psi	DFM	1 cm.
Airspeed	135 mph	BAR	1.5
Flow Rate	.6 gpm	Distance to Probe	51 cm.
Tank Mix	50% DIPEL 8L, 50% WATER	Sample Interval	360 sec.
		Number of Samples	1
		Number of Scans	10
		Scan Spacing	2.5 cm.
		Scan Length	38 cm.

FILE: C:\PMS\DATA\10078514.002  
Number of Tests Combined: 2

UPPER LIMIT	N(RAW)	N/SEC	Gm/SEC	%_N	%_VOL.	ACCUMULATED	
						%_N	%_VOL.
56	4315	2.31E+07	0.76	50.83	2.17	50.83	2.17
89	6376	7.63E+06	1.52	16.79	4.33	67.62	6.50
122	4657	5.64E+06	3.43	12.41	9.77	80.03	16.27
154	4088	4.11E+06	5.62	9.03	16.02	89.07	32.29
187	3158	2.45E+06	6.35	5.40	18.11	94.46	50.40
220	2204	1.29E+06	5.64	2.83	16.07	97.30	66.48
252	1410	689459	4.70	1.52	13.40	98.81	79.88
284	765	325916	3.27	0.72	9.34	99.53	89.21
318	355	135833	1.95	0.30	5.57	99.83	94.78
351	118	45400	0.89	0.10	2.53	99.93	97.31
382	64	23038	0.59	0.05	1.68	99.98	98.99
414	14	4029	0.13	0.01	0.38	99.99	99.37
447	6	1352	0.06	0.00	0.16	99.99	99.53
479	4	3181	0.16	0.01	0.47	100.00	100.00

TOTAL 2.75E+04 4.55E+07 35.07

TOTAL ACCEPTED RAW PARTICLES / TOTAL IMAGES = 27534 / 36021 = 76.4%

NUMBER MEAN DIA. = D<sub>10</sub>.... 79.81 μm  
VOLUME MEAN DIA. = D<sub>30</sub>.... 113.83 μm  
SAUTER MEAN DIA. = D<sub>32</sub>.... 157.79 μm

NUMBER MEDIAN DIA. = D<sub>N.1</sub>... <56 μm  
D<sub>N.5</sub>... <56 μm  
D<sub>N.9</sub>... 160.01 μm

VOLUME MEDIAN DIA. = D<sub>V.1</sub>... 100.77 μm  
D<sub>V.5</sub>... 186.56 μm  
D<sub>V.9</sub>... 288.97 μm

RELATIVE SPAN= 1.01





Figure II

Nozzle Type . . . 8006 FLAT FAN  
 Angle to Airstream 90°  
 Spray Pressure . . 40 psi  
 Airspeed . . . . . 135 mph  
 Flow Rate . . . . . .6 gpm  
 Tank Mix: 50% DIPEL 8L, 50%  
 WATER  
 FILE: C:\PMS\DATA\10078514.002

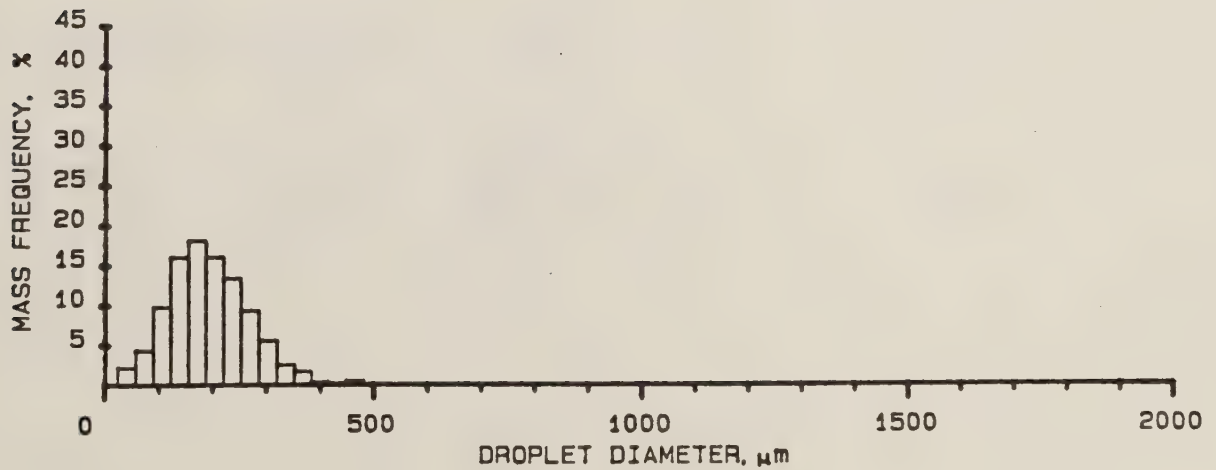
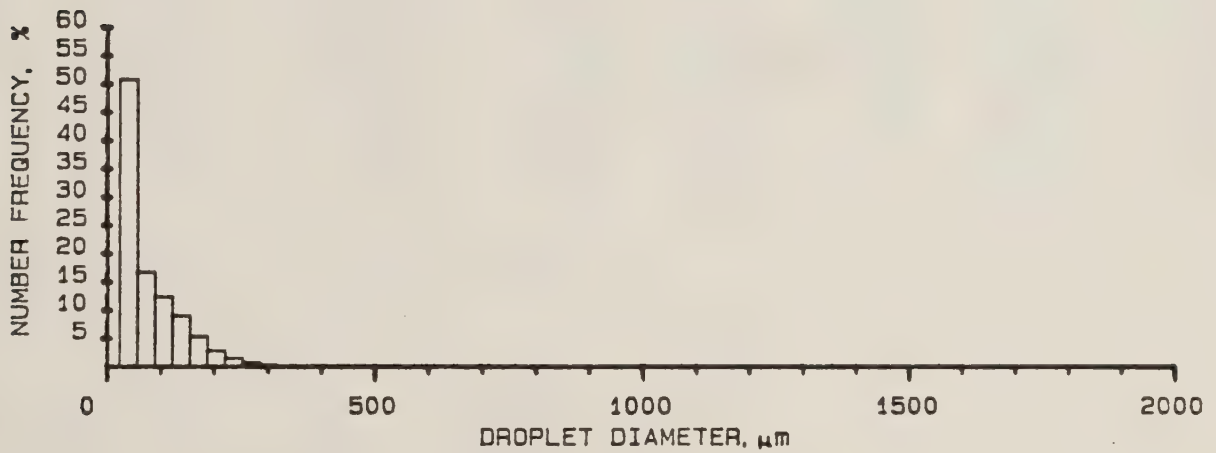
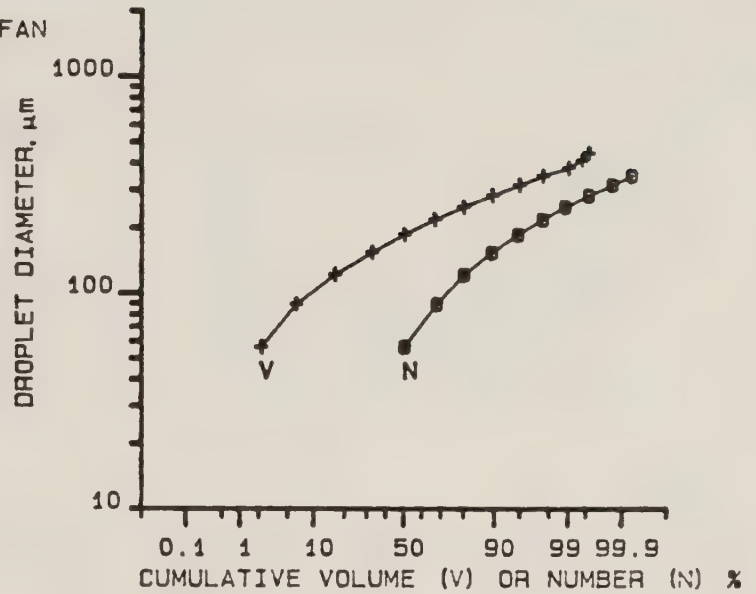




Table VII - Drop Size Data, Beecomist 360A, 50 mph, .37 gpm,  
Dipel 8L Neat

Nozzle	BEECOMIST 360A	Slice Rate	1.5 MHz
RPM	12700	AVG	20000
Spray Pressure	30 psi	DFM	1 cm.
Airspeed	50 mph	BAR	1.5
Flow Rate	.37 gpm	Distance to Probe	25 cm.
Tank Mix	DIPEL 8L, NEAT	Sample Interval	60 sec.
		Number of Samples	1
		Number of Sample Rings	8

FILE: C:\PMS\DATA\11048512.003

Number of Tests Combined:2

UPPER LIMIT	N(RAW)	N/SEC	Gm/SEC	%_N	%_VOL.	ACCUMULATED %_N	ACCUMULATED %_VOL.
56	13209	7.96E+07	2.62	69.99	11.59	69.99	11.59
89	15030	2.05E+07	4.08	18.06	18.07	88.05	29.66
122	13445	7.47E+06	4.53	6.57	20.08	94.61	49.75
154	17618	4.38E+06	5.99	3.85	26.53	98.46	76.27
187	11614	1.35E+06	3.48	1.18	15.42	99.65	91.69
220	5199	352026	1.54	0.31	6.62	99.96	98.51
252	822	45495	0.31	0.04	1.37	100.00	99.89
284	42	2244	0.02	0.00	0.10	100.00	99.98
318	2	178	0.00	0.00	0.01	100.00	100.00
351	1	44	0.00	0.00	0.00	100.00	100.00

TOTAL 7.70E+04 1.14E+08 22.58

TOTAL ACCEPTED RAW PARTICLES / TOTAL IMAGES = 76982 / 95234 = 80.9%

NUMBER MEAN DIA.= D<sub>10</sub>.... 55.87 μm  
 VOLUME MEAN DIA.= D<sub>30</sub>.... 72.42 μm  
 SAUTER MEAN DIA.= D<sub>32</sub>.... 94.80 μm

NUMBER MEDIAN DIA.= D<sub>N.1</sub>.... <56 μm  
 D<sub>N.5</sub>.... <56 μm  
 D<sub>N.9</sub>.... 98.76 μm

VOLUME MEDIAN DIA.= D<sub>V.1</sub>.... <56 μm  
 D<sub>V.5</sub>.... 121.92 μm  
 D<sub>V.9</sub>.... 183.68 μm

RELATIVE SPAN= 1.07 Extrapolated





Figure III

Nozzle Type . . . BEECOMIST 360A  
 RPM . . . . . 12700  
 Spray Pressure . . 30 psi  
 Airspeed . . . . . 50 mph  
 Flow Rate . . . . . .37 gpm  
 Tank Mix: DIPEL 8L, NEAT

FILE: C:\PMS\DATA\11048512.003

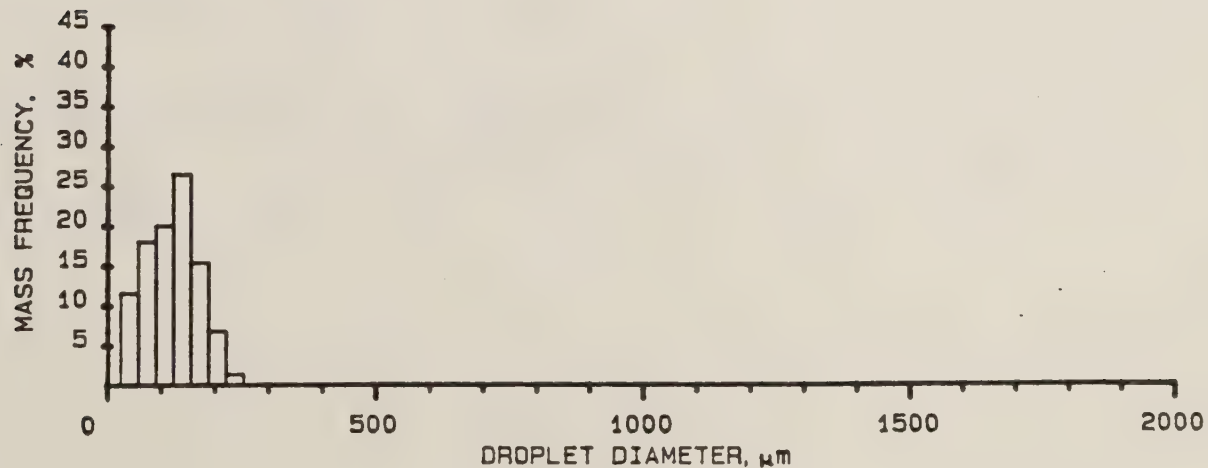
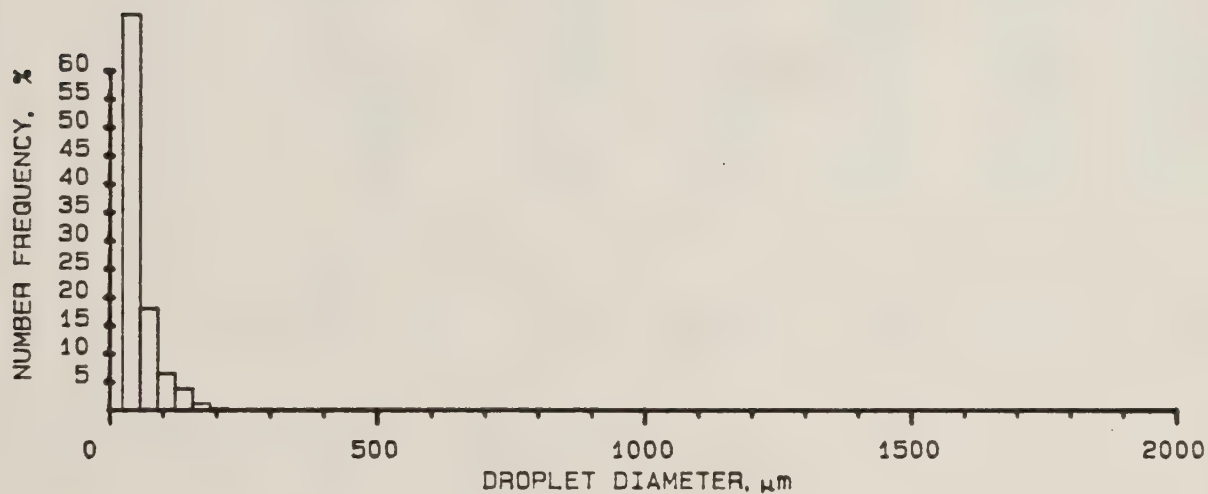
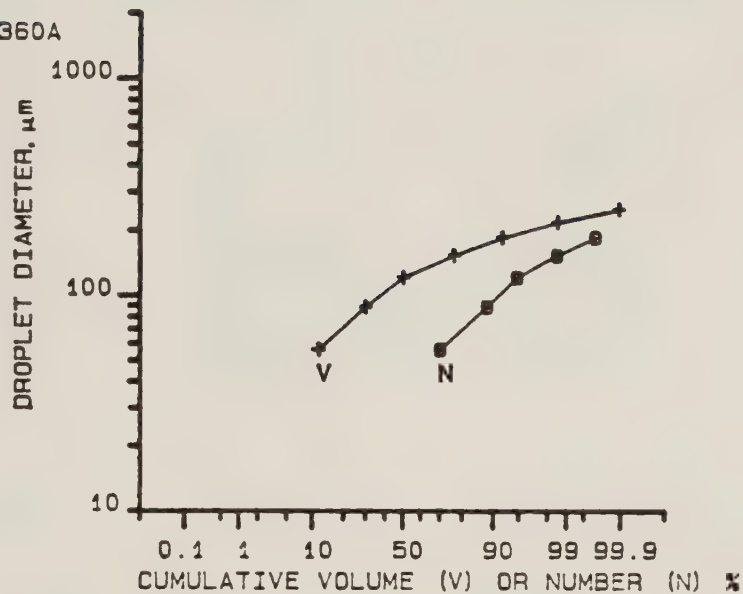




Table VIII - Drop Size Data, Beecomist 360A, 50 mph, .7 gpm,  
1 Part Dipel 8L, 1 Part Water

Nozzle	BEECOMIST 360A	Slice Rate	1.5 MHz
RPM	12700	AVG	20000
Spray Pressure	60 psi	DFM	1 cm.
Airspeed	50 mph	BAR	1.5
Flow Rate	.7 gpm	Distance to Probe	25 cm.
Tank Mix	50% DIPEL 8L, 50% WATER	Sample Interval	60 sec.
		Number of Samples	1
FILE: C:\PMS\DATA\11048514.003		Number of Sample Rings	9

Number of Tests Combined:2

UPPER LIMIT	N(RAW)	N/SEC	Gm/SEC	%_N	%_VOL.	ACCUMULATED	
						%_N	%_VOL.
56	17170	1.21E+08	3.99	66.59	9.10	66.59	9.10
89	17914	3.03E+07	6.03	16.63	13.74	83.22	22.84
122	20068	1.84E+07	11.19	10.12	25.52	93.34	48.36
154	15551	8.51E+06	11.65	4.67	26.56	98.01	74.92
187	10384	2.82E+06	7.29	1.55	16.63	99.55	91.55
220	3400	762508	3.34	0.42	7.61	99.97	99.15
252	187	45540	0.31	0.02	0.71	100.00	99.86
284	12	4224	0.04	0.00	0.10	100.00	99.96
318	3	1307	0.02	0.00	0.04	100.00	100.00

TOTAL 8.47E+04 1.82E+08 43.86

TOTAL ACCEPTED RAW PARTICLES / TOTAL IMAGES = 84689/ 107183 = 79.0%

NUMBER MEAN DIA.= D<sub>10</sub>.... 59.15 μm  
VOLUME MEAN DIA.= D<sub>30</sub>.... 77.20 μm  
SAUTER MEAN DIA.= D<sub>32</sub>.... 100.74 μm

NUMBER MEDIAN DIA.= D<sub>N.1</sub>... <56 μm  
D<sub>N.5</sub>... <56 μm  
D<sub>N.9</sub>... 111.05 μm

VOLUME MEDIAN DIA.= D<sub>V.1</sub>... 58.43 μm  
D<sub>V.5</sub>... 123.64 μm  
D<sub>V.9</sub>... 184.23 μm

RELATIVE SPAN= 1.02





Figure IV

Nozzle Type . . . BEECOMIST 360A  
RPM . . . . . 12700  
Spray Pressure . . 60 psi  
Airspeed . . . . . 50 mph  
Flow Rate . . . . . .7 gpm  
Tank Mix: 50% DIPEL 8L, 50%  
WATER  
FILE: C:\PMS\DATA\11048514.003

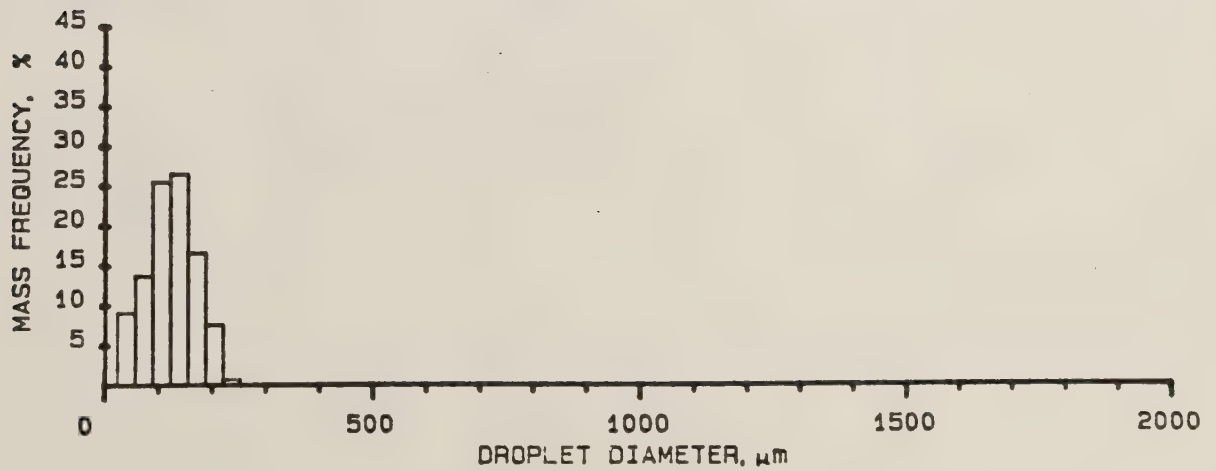
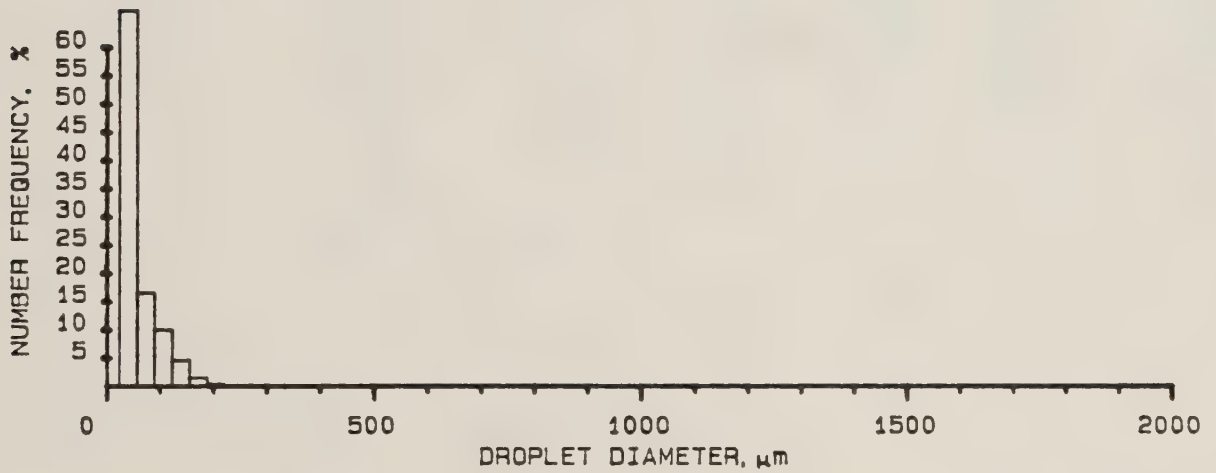
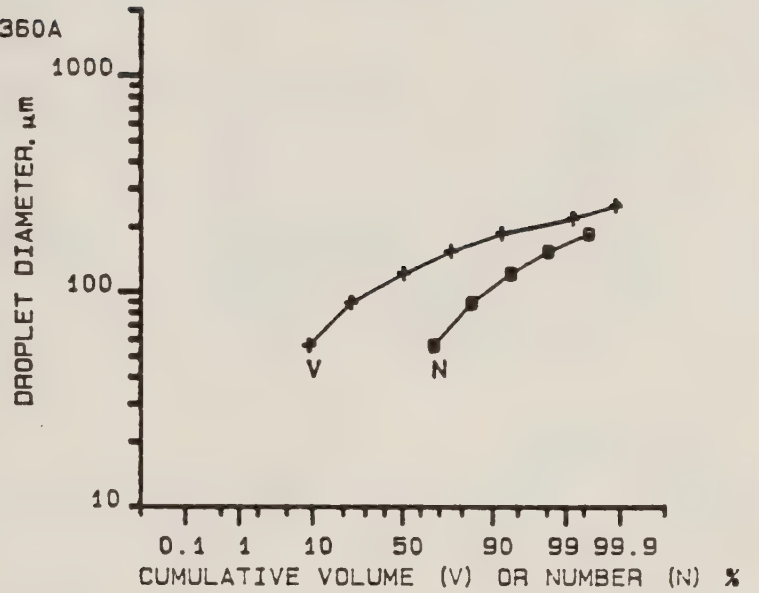




Table IX - Drop Size Data, Beecomist 360A, 50 mph, .95 gpm,  
1 Part Dipel 8L, 1 Part Water

Nozzle	BEECOMIST 360A	Slice Rate	1.5 MHz
RPM	12700	AVG	20000
Spray Pressure	25 psi	DFM	1 cm.
Airspeed	50 mph	BAR	1.5
Flow Rate	.95 gpm	Distance to Probe	25 cm.
Tank Mix	50% DIPEL 8L, 50% WATER	Sample Interval	60 sec.
		Number of Samples	1
FILE: C:\PMS\DATA\11078513.003		Number of Sample Rings	9

Number of Tests Combined:2

UPPER LIMIT	N(RAW)	N/SEC	Gm/SEC	%N	%VOL	ACCUMULATED	
						%N	%VOL
56	17386	1.34E+08	4.40	64.40	7.81	64.40	7.81
89	18014	3.53E+07	7.01	16.97	12.43	81.37	20.24
122	19124	2.32E+07	14.10	11.16	25.00	92.55	45.24
154	13586	1.02E+07	13.90	4.89	24.65	97.43	69.89
167	10380	3.88E+06	10.03	1.87	17.80	99.30	87.69
220	5328	1.24E+06	5.41	0.60	9.59	99.90	97.28
252	970	199403	1.36	0.10	2.41	99.99	99.69
284	62	12495	0.13	0.01	0.22	100.00	99.91
316	4	1127	0.02	0.00	0.03	100.00	99.94
351	4	1658	0.03	0.00	0.06	100.00	100.00

TOTAL 8749E+04 2708E+08 56.37

TOTAL ACCEPTED RAW PARTICLES / TOTAL IMAGES = 84858 / 110041 = 77.1%

NUMBER MEAN DIA. =  $D_{10}$ .... 61.02  $\mu$ m  
 VOLUME MEAN DIA. =  $D_{30}$ .... 80.36  $\mu$ m  
 SAUTER MEAN DIA. =  $D_{32}$ .... 105.52  $\mu$ m

NUMBER MEDIAN DIA. =  $D_{N.1}$ ... <56  $\mu$ m  
 $D_{N.5}$ ... <56  $\mu$ m  
 $D_{N.9}$ ... 114.42  $\mu$ m

VOLUME MEDIAN DIA. =  $D_{V.1}$ ... 62.10  $\mu$ m  
 $D_{V.5}$ ... 127.97  $\mu$ m  
 $D_{V.9}$ ... 194.85  $\mu$ m

RELATIVE SPAN= 1.04





Figure V

Nozzle Type . . . BEECOMIST 360A  
 RPM . . . . . 12700  
 Spray Pressure . . 25 psi  
 Airspeed . . . . . 50 mph  
 Flow Rate . . . . . .95 gpm  
 Tank Mix: 50% DIPEL 8L, 50%  
 WATER  
 FILE: C:\PMS\DATA\11078513.003

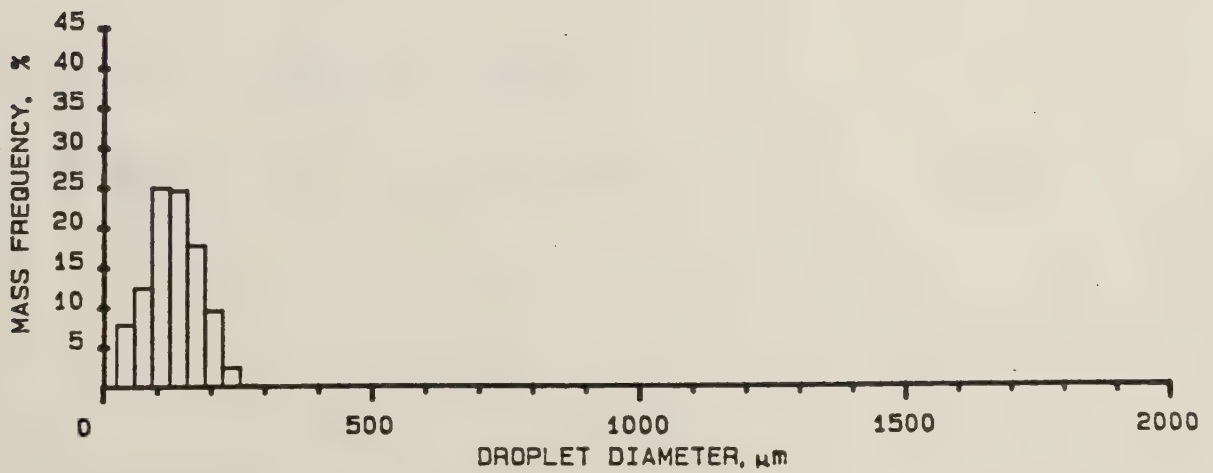
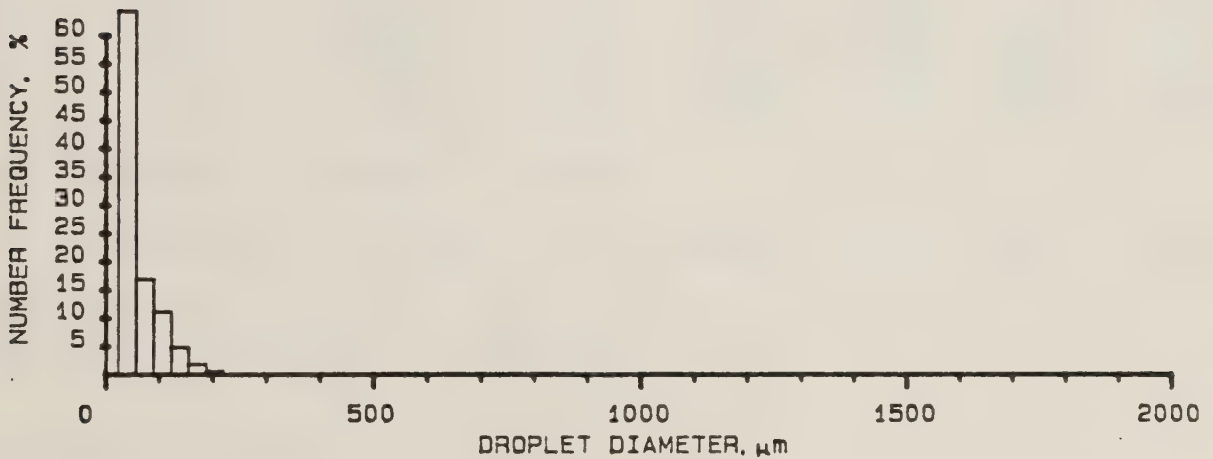
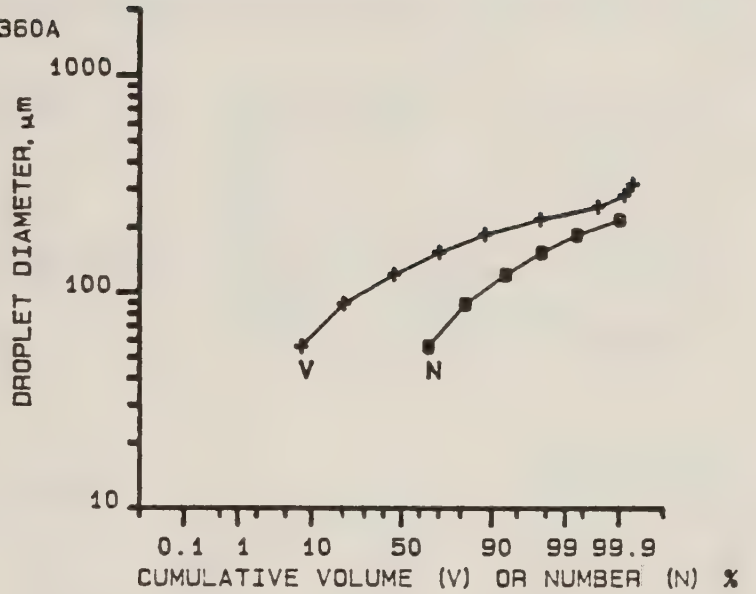




Table X - Drop Size Data, Beecomist 360A, 50 mph, .47 gpm,  
Thuricide 48LV Neat

Nozzle	BEECOMIST 360A	Slice Rate	1.5 MHz
RPM	12700	AVG	20000
Spray Pressure	30 psi	DFM	1 cm.
Airspeed	50 mph	BAR	1.5
Flow Rate	.47 gpm	Distance to Probe	25 cm.
Tank Mix	THURICIDE 48LV, NEAT	Sample Interval	60 sec.
		Number of Samples	1
		Number of Sample Rings	9

FILE: C:\PMS\DATA\08288511.003

Number of Tests Combined: 2

UPPER LIMIT	N(RAW)	N/SEC	Gm/SEC	%_N	%_VOL	ACCUMULATED	
						%_N	%_VOL
56	20839	1.98E+08	6.50	82.14	26.09	82.14	26.09
89	21130	3.05E+07	6.06	12.66	24.30	94.81	50.39
122	18098	8.23E+06	5.00	3.42	20.05	98.23	70.44
154	13659	3.26E+06	4.46	1.36	17.91	99.58	88.35
187	6060	841250	2.18	0.35	8.74	99.93	97.09
220	1584	150823	0.66	0.06	2.65	100.00	99.74
252	90	8250	0.06	0.00	0.23	100.00	99.96
284	6	932	0.01	0.00	0.04	100.00	100.00

TOTAL 8.15E+04 2.41E+08 24.92

TOTAL ACCEPTED RAW PARTICLES / TOTAL IMAGES = 81466 / 103182 = 79.0%

NUMBER MEAN DIA. = D<sub>10</sub>.... 48.04 μm  
 VOLUME MEAN DIA. = D<sub>30</sub>.... 58.29 μm  
 SAUTER MEAN DIA. = D<sub>32</sub>.... 72.59 μm

NUMBER MEDIAN DIA. = D<sub>N.1</sub>... <56 μm  
 D<sub>N.5</sub>... <56 μm  
 D<sub>N.9</sub>... 76.74 μm

VOLUME MEDIAN DIA. = D<sub>V.1</sub>... <56 μm  
 D<sub>V.5</sub>... 88.74 μm  
 D<sub>V.9</sub>... 160.52 μm

RELATIVE SPAN = 1.42 Extrapolated



Figure VI

Nozzle Type . . . BEECOMIST 360A  
 RPM . . . . . 12700  
 Spray Pressure . . 30 psi  
 Airspeed . . . . . 50 mph  
 Flow Rate . . . . . .47 gpm  
 Tank Mix: THURICIDE 48LV, NEAT

FILE: C:\PMS\DATA\08288511.003

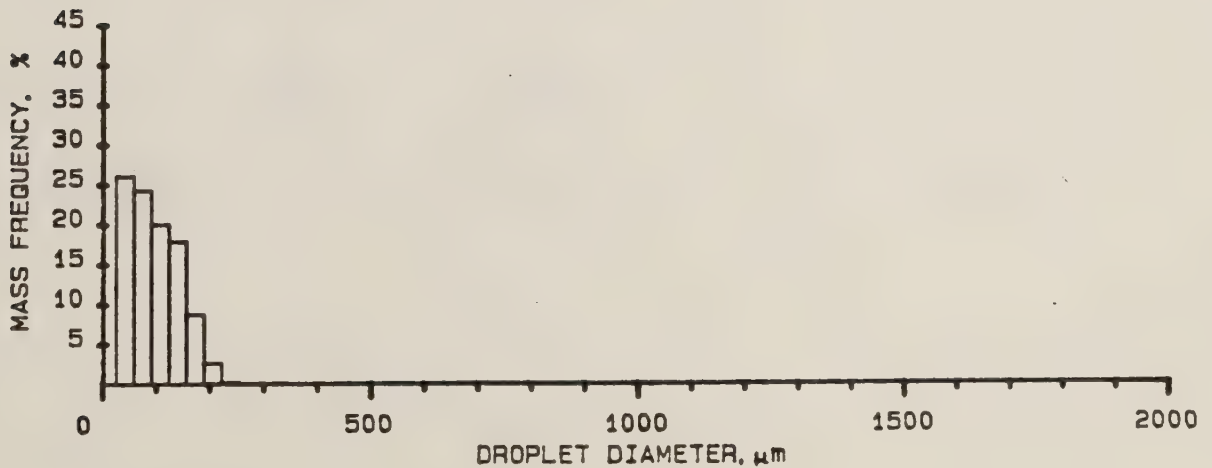
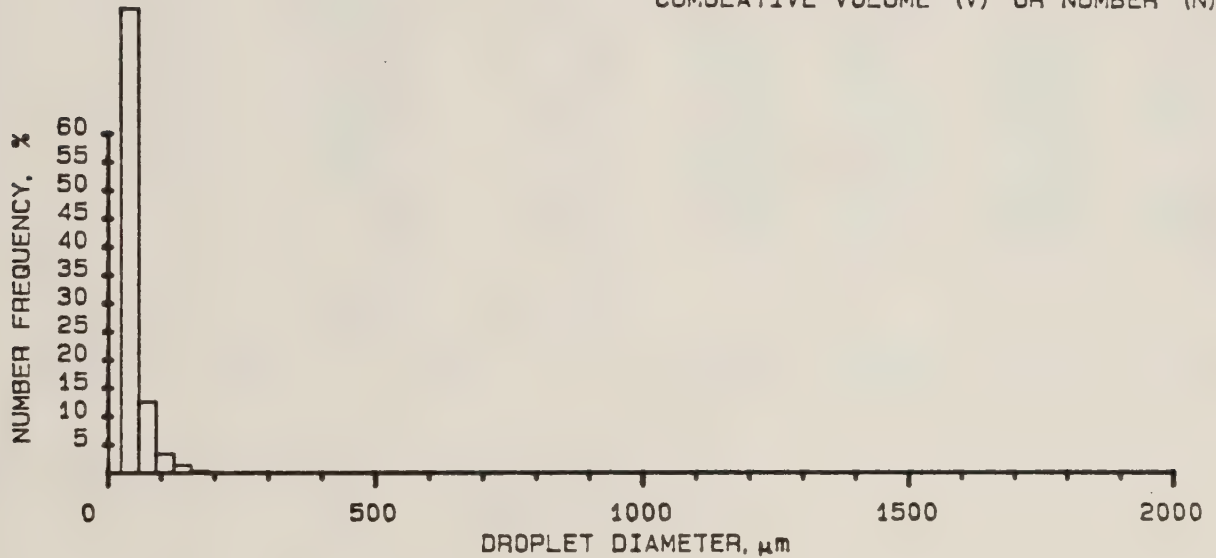
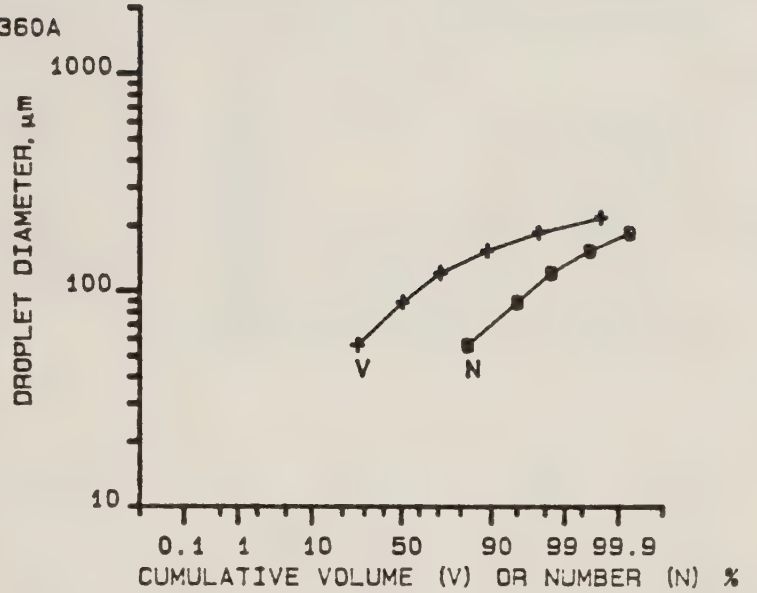






Table XI - Drop Size Data, Beecomist 360A, 50 mph, .95 gpm,  
1 Part Thuricide 48LV, 1 Part Water

Nozzle	BEECOMIST 360A	Slide Rate	1.5 MHz
RPM	12700	AVG	20000
Spray Pressure	25 psi	DFM	1 cm.
Airspeed	50 mph	BAR	1.5
Flow Rate	.95 gpm	Distance to Probe	25 cm.
Tank Mix	50% THURICIDE 48LV	Sample Interval	60 sec.
	50% WATER	Number of Samples	1
FILE: C:\PMS\DATA\10108509.003		Number of Sample Rings	9

Number of Tests Combined:2

UPPER LIMIT	N(RAW)	N/SEC	Gm/SEC	%_N	%_VOL.	ACCUMULATED	
						%_N	%_VOL.
56	14920	2.95E+08	9.72	72.49	15.31	72.49	15.31
89	16682	7.07E+07	14.07	17.36	22.15	89.84	37.46
122	17328	2.87E+07	17.45	7.05	27.47	96.89	64.94
154	15222	9.56E+06	13.08	2.35	20.61	99.24	85.54
187	10155	2.53E+06	6.54	0.62	10.30	99.86	95.85
220	3555	528636	2.31	0.13	3.64	99.99	99.49
252	350	45466	0.31	0.01	0.49	100.00	99.98
284	7	1196	0.01	0.00	0.02	100.00	100.00
318	1	136	0.00	0.00	0.00	100.00	100.00

TOTAL	7.84E+04	4.08E+08	63.49
-------	----------	----------	-------

TOTAL ACCEPTED RAW PARTICLES / TOTAL IMAGES = 78420 / 108546 = 72.2%

NUMBER MEAN DIA. = D<sub>10</sub>.... 53.39 μm  
VOLUME MEAN DIA. = D<sub>30</sub>.... 66.78 μm  
SAUTER MEAN DIA. = D<sub>32</sub>.... 84.58 μm

NUMBER MEDIAN DIA. = D<sub>N.1</sub>.... <56 μm  
D<sub>N.5</sub>.... <56 μm  
D<sub>N.9</sub>.... 89.67 μm

VOLUME MEDIAN DIA. = D<sub>V.1</sub>.... <56 μm  
D<sub>V.5</sub>.... 104.00 μm  
D<sub>V.9</sub>.... 168.57 μm

RELATIVE SPAN= 1.16 Extrapolated



Figure VII

Nozzle Type . . . BEECOMIST 360A  
 RPM . . . . . 12700  
 Spray Pressure . . 25 psi  
 Airspeed . . . . . 50 mph  
 Flow Rate . . . . . .95 gpm  
 Tank Mix: 50% THURICIDE 48LV  
 50% WATER  
 FILE: C:\PMS\DATA\10108509.003

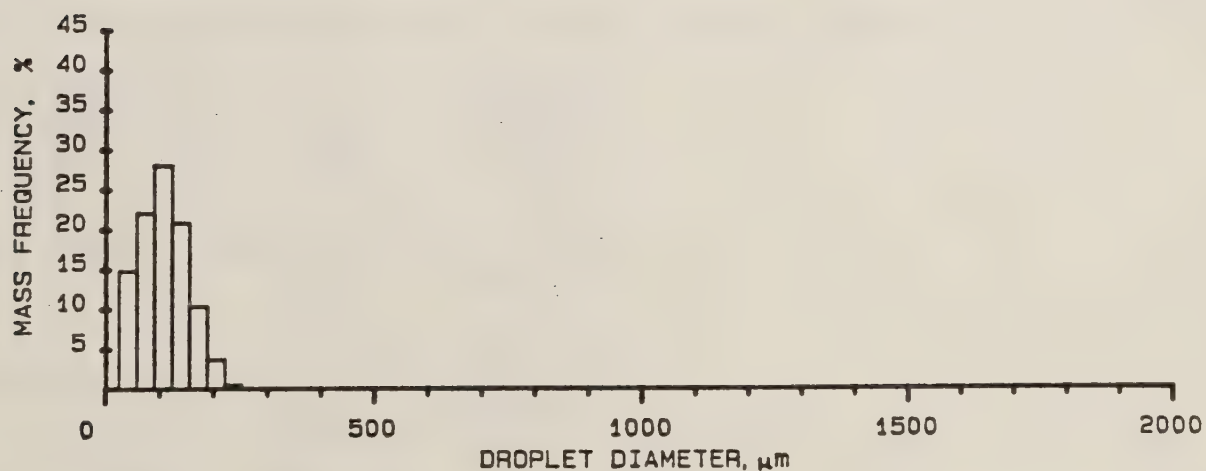
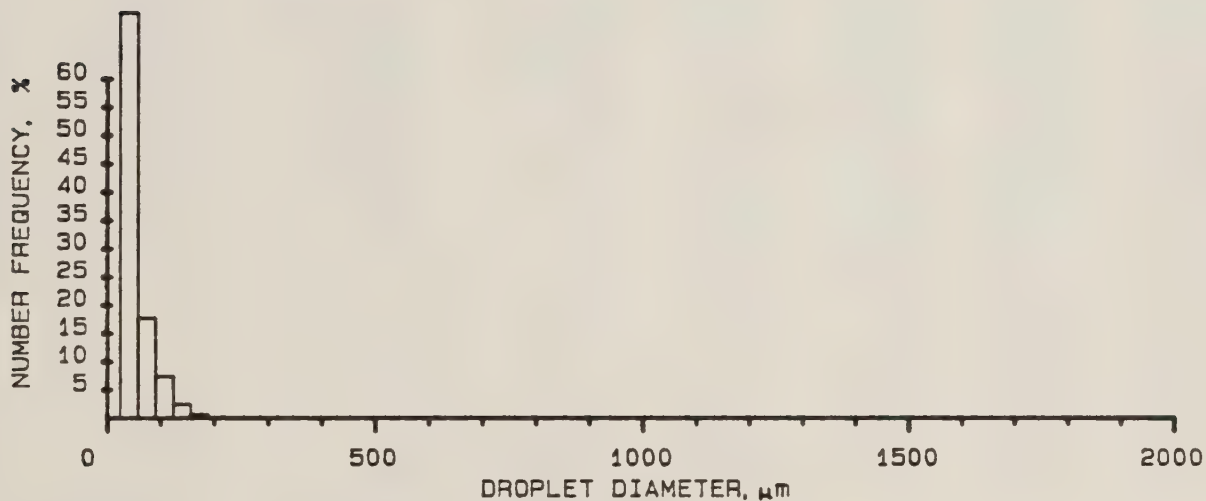
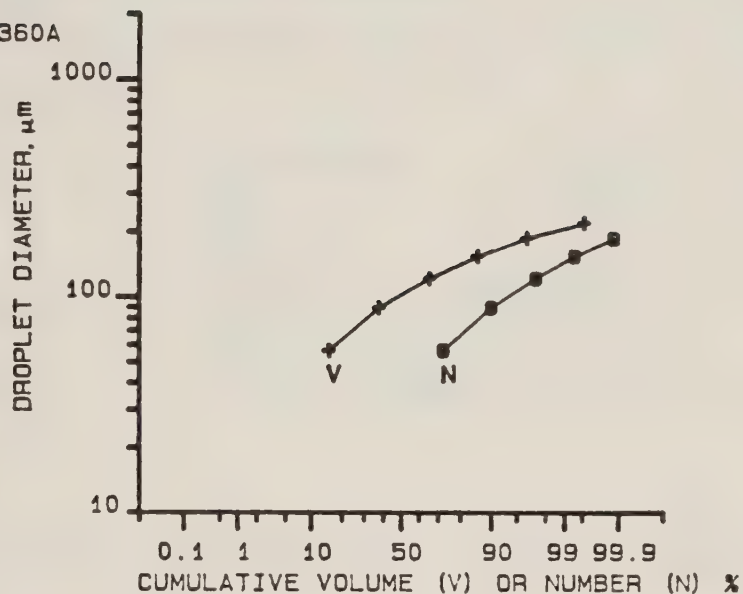






Table XII - Drop Size Data, Micronair AU5000, 135 mph,  
.95 gpm, Dipel 8L Neat

Nozzle	AU5000	Slice Rate	4 MHz
RPM	7600	AVG	20000
Spray Pressure	40 psi	DFM	1 cm.
Airspeed	135 mph	BAR	1.5
Flow Rate	.95 gpm	Distance to Probe	46 cm.
Tank Mix	DIPEL 8L, NEAT	Sample Interval	60 sec.
		Number of Samples	1
		Number of Sample Rings	9

FILE: C:\PMS\DATA\09248509.003

Number of Tests Combined: 2

UPPER LIMIT	N(RAW)	N/SEC	Gm/SEC	% N	% VOL.	ACCUMULATED	
						% N	% VOL.
56	9560	6.27E+07	2.06	54.02	5.60	54.02	5.60
89	23347	2.41E+07	4.80	20.78	13.02	74.80	18.63
122	24148	1.78E+07	10.81	15.34	29.36	90.14	47.99
154	16362	9.12E+06	12.49	7.86	33.91	98.00	81.90
167	5089	2.06E+06	5.33	1.78	14.48	99.77	96.38
220	747	238287	1.04	0.21	2.83	99.98	99.21
252	58	18843	0.13	0.02	0.35	100.00	99.56
284	8	3146	0.03	0.00	0.09	100.00	99.64
318	2	878	0.01	0.00	0.03	100.00	99.68
351	0	0	0.00	0.00	0.00	100.00	99.68
382	0	0	0.00	0.00	0.00	100.00	99.68
414	1	210	0.01	0.00	0.02	100.00	99.69
447	1	179	0.01	0.00	0.02	100.00	99.72
479	0	0	0.00	0.00	0.00	100.00	99.72
512	0	0	0.00	0.00	0.00	100.00	99.72
545	1	1363	0.10	0.00	0.28	100.00	100.00

TOTAL 8.13E+04 1.16E+08 36.82

TOTAL ACCEPTED RAW PARTICLES / TOTAL IMAGES = 81324 / 101173 = 80.4%

NUMBER MEAN DIA. = D<sub>10</sub>.... 66.99 μm  
 VOLUME MEAN DIA. = D<sub>30</sub>.... 84.65 μm  
 SAUTER MEAN DIA. = D<sub>32</sub>.... 105.53 μm

NUMBER MEDIAN DIA. = D<sub>N.1</sub>... <56 μm  
 D<sub>N.5</sub>... <56 μm  
 D<sub>N.9</sub>... 121.64 μm

VOLUME MEDIAN DIA. = D<sub>V.1</sub>... 67.41 μm  
 D<sub>V.5</sub>... 123.56 μm  
 D<sub>V.9</sub>... 172.77 μm

RELATIVE SPAN = 0.85



Figure VIII

Nozzle Type . . . AU5000  
 RPM . . . . . 7600  
 Spray Pressure . . 40 psi  
 Airspeed . . . . . 135 mph  
 Flow Rate . . . . . .95 gpm  
 Tank Mix: DIPEL 8L, NEAT

FILE: C:\PMS\DATA\09248509.003

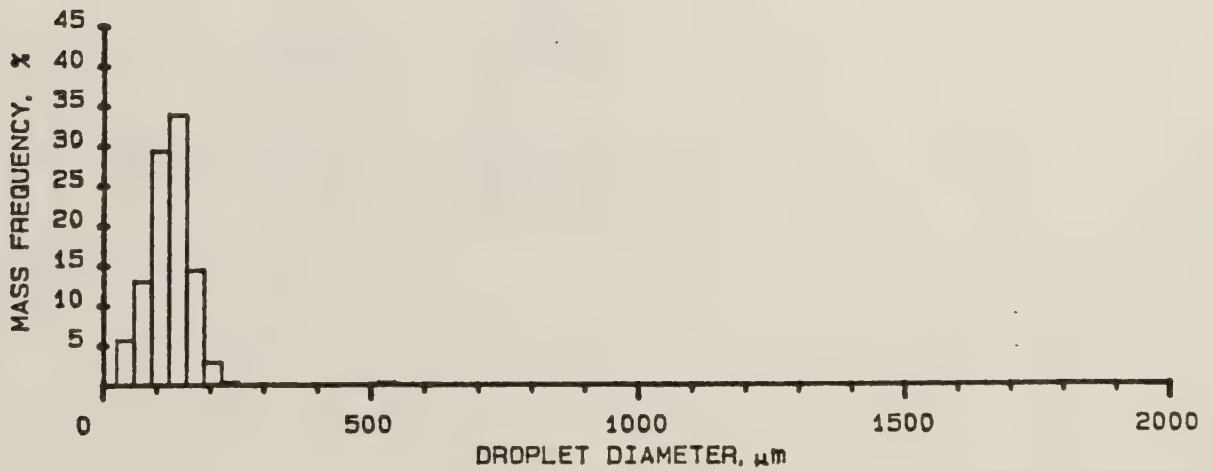
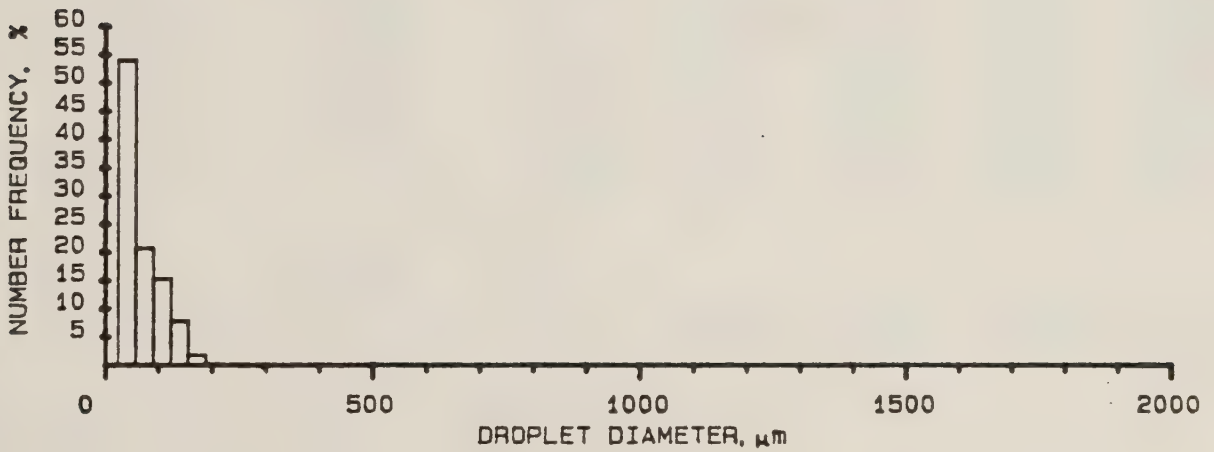
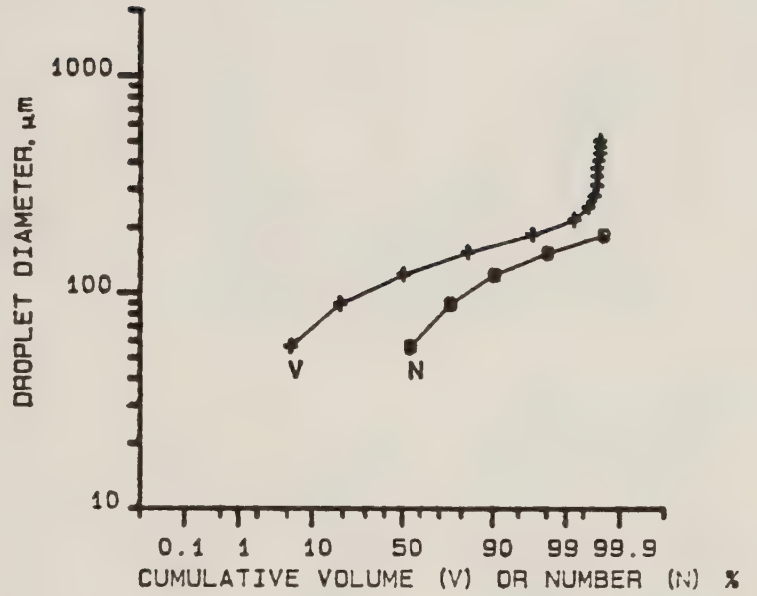




Table XIII - Drop Size Data, Micronair AU5000, 135 mph,  
1.9 gpm, 1 Part Dipel 8L, 1 Part Water

Nozzle	AU5000	Slice Rate	4 MHz
RPM	7600	AVG	20000
Spray Pressure	45 psi	DFM	1 cm.
Airspeed	135 mph	BAR	1.5
Flow Rate	1.9 gpm	Distance to Probe	46 cm.
Tank Mix	50% DIPEL 8L, 50% WATER	Sample Interval	60 sec.
		Number of Samples	1
FILE: C:\PMS\DATA\08308511.003		Number of Sample Rings	9

Number of Tests Combined: 2

UPPER LIMIT	N(RAW)	N/SEC	Gm/SEC	% N	% VOL.	ACCUMULATED	
						% N	% VOL.
56	9331	1.34E+08	4.40	57.04	5.85	57.04	5.85
89	20368	4.49E+07	8.92	19.13	11.86	76.17	17.72
122	20816	3.17E+07	19.26	13.52	25.61	89.69	43.33
154	17122	1.82E+07	24.97	7.78	33.21	97.47	76.54
187	6310	5.00E+06	12.95	2.13	17.22	99.60	93.75
220	1196	766895	3.36	0.33	4.46	99.93	98.22
252	222	133914	0.91	0.06	1.21	99.98	99.43
284	50	28407	0.29	0.01	0.38	100.00	99.81
318	10	5630	0.06	0.00	0.11	100.00	99.92
351	5	3079	0.06	0.00	0.08	100.00	100.00
382	0	0	0.00	0.00	0.00	100.00	100.00
414	2	90	0.00	0.00	0.00	100.00	100.00

TOTAL 7.54E+04 2.35E+08 75.19

TOTAL ACCEPTED RAW PARTICLES / TOTAL IMAGES = 75432 / 104882 = 71.9%

NUMBER MEAN DIA. = D<sub>10</sub>.... 65.95 μm  
 VOLUME MEAN DIA. = D<sub>30</sub>.... 84.95 μm  
 SAUTER MEAN DIA. = D<sub>32</sub>.... 108.01 μm

NUMBER MEDIAN DIA. = D<sub>N.1</sub>... <56 μm  
 D<sub>N.5</sub>... <56 μm  
 D<sub>N.9</sub>... 122.93 μm

VOLUME MEDIAN DIA. = D<sub>V.1</sub>... 67.81 μm  
 D<sub>V.5</sub>... 128.23 μm  
 D<sub>V.9</sub>... 180.11 μm

RELATIVE SPAN = 0.88





Figure IX

Nozzle Type . . . AU5000  
 RPM . . . . . 7600  
 Spray Pressure . . 45 psi  
 Airspeed . . . . . 135 mph  
 Flow Rate . . . . . 1.9 gpm  
 Tank Mix: 50% DIPEL 8L, 50%  
 WATER  
 FILE: C:\PMS\DATA\08308511.003

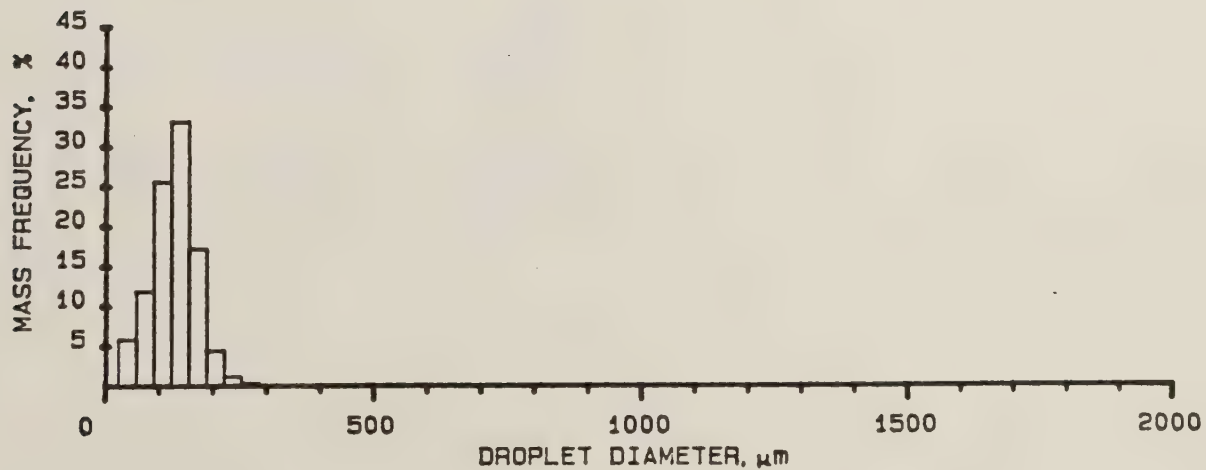
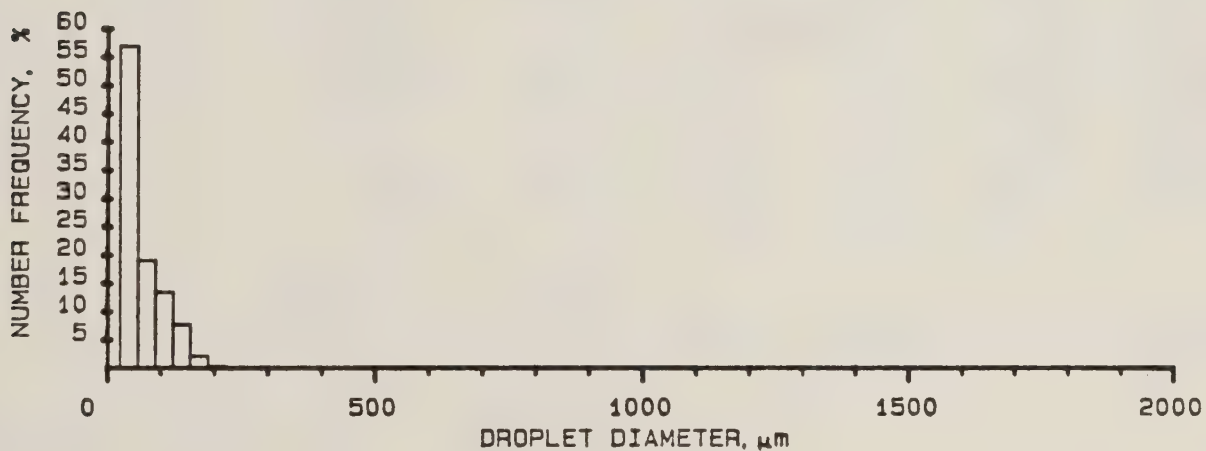
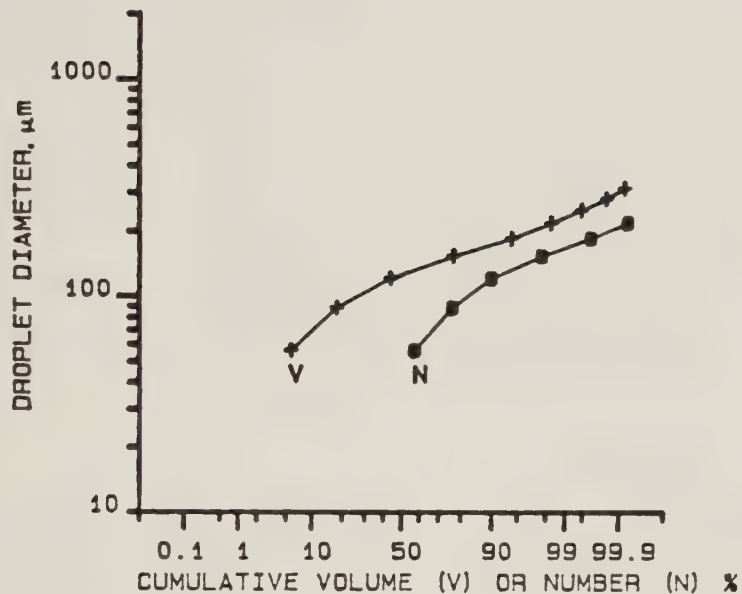




Table XIV - Drop Size Data, Micronair AU5000, 135 mph,  
2.6 gpm, 1 Part Dipel 8L, 1 Part Water

Nozzle	AU5000	Slide Rate	4 MHz
RPM	12700	AVG	20000
Spray Pressure	40 psi	DFM	1 cm.
Airspeed	135 mph	BAR	1.5
Flow Rate	2.6 gpm	Distance to Probe	46 cm.
Tank Mix	50% DIPEL 8L, 50% WATER	Sample Interval	60 sec.
		Number of Samples	1
		Number of Sample Rings	9

FILE: C:\PMS\DATA\09038514.003

Number of Tests Combined:2

UPPER LIMIT	N(RAW)	N/SEC	Gm/SEC	%_N	%_VOL.	ACCUMULATED	
						%_N	%_VOL.
56	7016	1.55E+08	5.09	62.50	8.25	62.50	8.25
89	18697	4.69E+07	9.32	18.93	15.11	81.43	23.36
122	20114	2.84E+07	17.25	11.48	27.98	92.91	51.34
154	14566	1.39E+07	18.98	5.60	30.79	98.51	82.13
187	4298	3.06E+06	7.93	1.24	12.86	99.75	94.98
220	761	493841	2.16	0.20	3.50	99.95	98.49
252	179	106208	0.72	0.04	1.17	99.99	99.66
284	47	16567	0.17	0.01	0.27	100.00	99.93
318	7	1902	0.03	0.00	0.04	100.00	99.97
351	1	433	0.01	0.00	0.01	100.00	99.99
382	1	283	0.01	0.00	0.01	100.00	100.00

TOTAL 6.57E+04 2.48E+08 61.66

TOTAL ACCEPTED RAW PARTICLES / TOTAL IMAGES = 65687/ 96112 = 68.3%

NUMBER MEAN DIA.= D<sub>10</sub>.... 60.99 μm  
 VOLUME MEAN DIA.= D<sub>30</sub>.... 78.10 μm  
 SAUTER MEAN DIA.= D<sub>32</sub>.... 99.54 μm

NUMBER MEDIAN DIA.= D<sub>N.1</sub>... <56 μm  
 D<sub>N.5</sub>... <56 μm  
 D<sub>N.9</sub>... 113.58 μm

VOLUME MEDIAN DIA.= D<sub>V.1</sub>... 60.08 μm  
 D<sub>V.5</sub>... 120.36 μm  
 D<sub>V.9</sub>... 174.51 μm

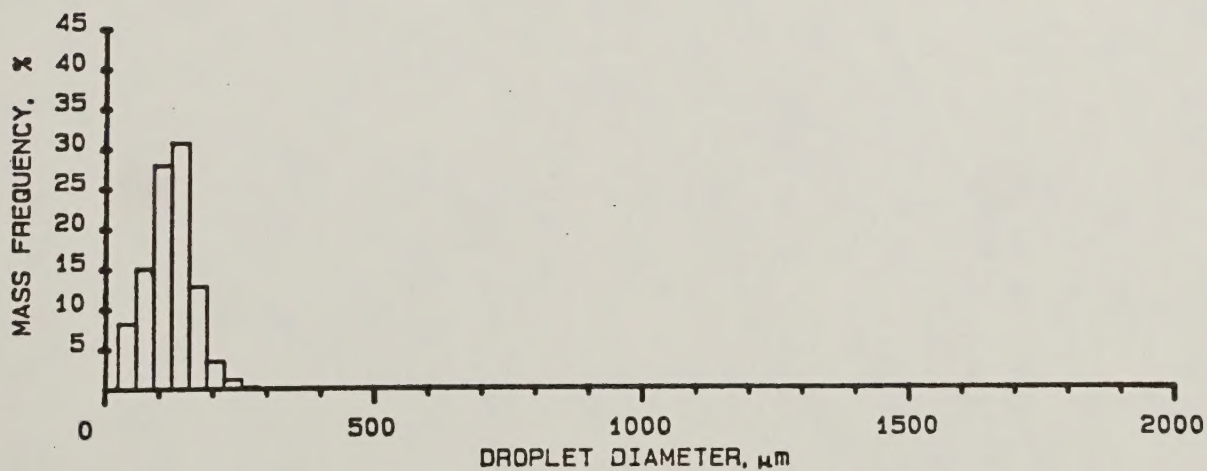
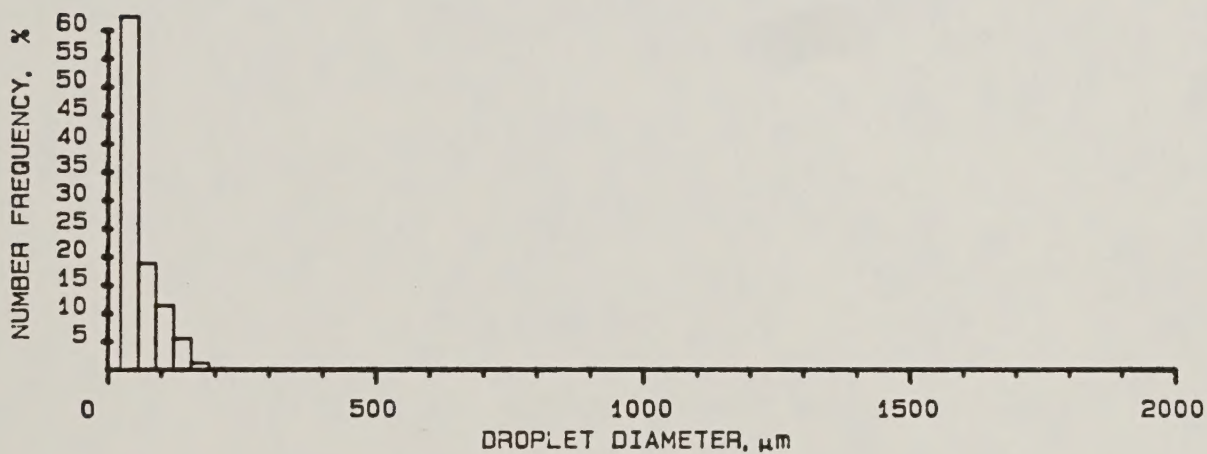
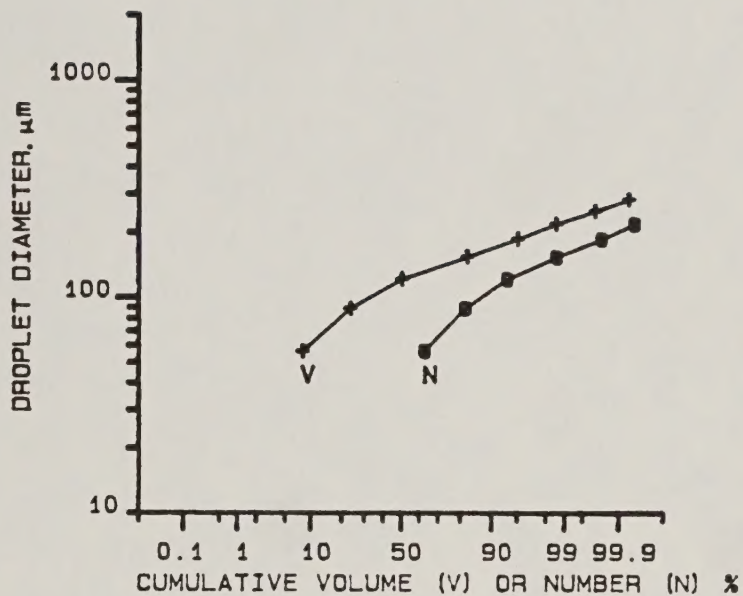
RELATIVE SPAN= 0.95





Figure X

Nozzle Type . . . AU5000  
 RPM . . . . . 12700  
 Spray Pressure . . 40 psi  
 Airspeed . . . . . 135 mph  
 Flow Rate . . . . . 2.6 gpm  
 Tank Mix: 50% DIPEL 8L, 50%  
 WATER  
 FILE: C:\PMS\DATA\09038514.003









NATIONAL AGRICULTURAL LIBRARY



1023166592